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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/513,702	02/25/2000	Toshikazu Mukaihara	P1168	7271

7590

07/16/2003

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EXAMINER

FLORES RUIZ, DELMA R

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/513,702

Applicant(s)

MUKAIHARA ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

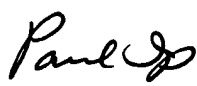
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 9, 12, 15 – 17, 20, 25, 27, and 29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (5,737,474) in view of Yoshida et al (6,567,447).

Regarding claim 1, 3, 4, 9, 12, 15 – 17, 20, 25, 27, and 29, Aoki discloses a semiconductor pumping laser device comprising; a resonator cavity having a first end face and second end face, and comprising a cavity portion between the first and second end face, and width that can only support a single transverse mode; a laminated structure of a semiconductor material including an active layer comprising at least one quantum well structure, said laminated structure being formed on a substrate and having at least a portion disposed in said cavity portion; a low reflection film formed

having a reflectance of 5 % or less on one end face of the structure; and a high reflection film having a reflectance of 80 % or more formed on the other end face of the structure (see Figs. 4A, - 4C, 5A - 5C, and 6A - 6C, Column 6, Lines 40 - 45, Column 7, Lines 12 - 29, 55 - 58, Column 8, Lines 46 - 56). A active layer has no more than two quantum wells, wherein said structure comprising a gallium, arsenide, and wherein said laminated structure includes at least gallium an arsenide and includes at least indium and nitrogen (see Figs. 4A, - 4C, 5A - 5C, and 6A - 6C, Column Lines 62 - 67, Column 6, Lines 1 - 45, Column 7, Lines 1 - 58, Column 8, Lines 46 - 56). A semiconductor-pumping laser emits light in the 0.98 μm wavelength-band (Column 4, Lines 26 - 34). The light output of the laser device is coupled to a optical fiber such that light from an optical fiber is feedback to the laser device , Column 6, Lines 1 - 45, Column 7, Lines 1 - 58, Column 8, Lines 46 - 56). Aoki discloses the claimed invention except for the cavity portion having a length grater than or equal to 1,200 μm . It would have been obvious at the time of applicant's invention, to combine Yoshida of teaching a the cavity portion having a length grater than or equal to 1,200 μm with semiconductor laser because it would have been obvious to one of ordinary skill in the art at the time the invention was made to the cavity portion having a length grater than or equal to 1,200 μm , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 2, 5 – 8, 10 – 11, 13 – 14, 18 – 19, 21 – 24, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (5,737,474) in view of Yoshida et al (6,567,447) further in view of DeMars et al (6,122,299).

Regarding claims 2, 5 – 8, 10 – 11, 13 – 14, 18 – 19, 21 – 24, 26, and 28

Shimizu in view of Yoshida discloses the claimed invention except for the semiconductor device has a transverse light confinement structure with the transverse refractive index difference of about 1×10^{-2} for oscillation modes, the coefficient of light confinement to the active layer range for 1% to 2% and the output light of the laser is free of kinks for driving currents up to at least 350 mA, where a kink is a variation of 15% or more in the external differential quantum efficiency of the laser relative to the initial value present when the injected current just exceeds the threshold current. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to semiconductor device has a transverse light confinement structure with the transverse refractive index difference of about 1×10^{-2} for oscillation modes, the coefficient of light confinement to the active layer range for 1% to 2% the output light of the laser is free of kinks for driving currents up to at least 350 mA, where a kink is a variation of 15% or more in the external differential quantum efficiency of the laser relative to the initial value present when the injected current just exceeds the threshold current. since it has been held that discovering an optimum value

of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

Applicant's arguments with respect to claims 1 - 29 have been considered but are moot in view of the new ground(s) of rejection. Applicants amendments raised new issues that made necessary the new art to be applied and therefore, the arguments presented against Aoki et al. (5,737,474) in view of Yoshida et al US 2001/0048702 A1 are said to be moot due to the new grounds of rejection. Applicant's amendments have been fully addressed by the above presented rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.



Delma R. Flores Ruiz
Examiner
Art Unit 2828



Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
June 25, 2003